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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/795,914	03/08/2004	Jaehoon Heo	TI-36083	1813

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EXAMINER

JEAN PIERRE, PEGUY

ART UNIT PAPER NUMBER

2819

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/795,914

Applicant(s)

HEO, JAEHOON

Examiner

Peguy JeanPierre

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-3, 5-8, 12-23, 25-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,3,5,6,12-17,22 and 25-29 is/are allowed.
- 6) ☒ Claim(s) 7,8,18,20,21,23,30 and 31 is/are rejected.
- 7) ☒ Claim(s) 9,10,19 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-8, 18, 20, 21, 23, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lim et al. (US 2002/0075953) in view of Le Ngoc et al. (US 5,175,819) and Kamiya (USP 6,438,434).

Lim et al. disclose in Figure 3, a method for conversion of signals that comprises a plurality of look up tables (300-600) whose outputs are connected to the inputs of a plurality of accumulators (700-1000). The lookup tables receive inputs from a shift register (100) via an address register (200) and sequentially output the data. The shift register (100) comprises a selector that selects subset of bits of equal size (see paragraph 43) to be inputted and stored into the address register. The address (200) generating address to a lookup table group corresponding to each of a plurality of filter coefficients groups in response to the input (subset) data selected (see paragraph 13). The input data (direct stream digital) is converted to PCM signal (see paragraph 3). The accumulators include an adder to add the data to the already added/stored data to form a partial sum and inherently output a signal after the last data being added, a register to store the data, and accumulate the results outputted by each coefficient group (see paragraph 20) to generate at an output a multiple-bit second signal (see Fig. 8,

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paragraph 64) inherently after adding the last subset of bits. Lim et al. teach a shift register instead of a first-in-first-out register (FIFO) to receive the direct stream digital data.

Le Ngoc et al. disclose that FIFO buffer functions as a shift register (see col. 1 lines 14-15) because FIFO device usually comprises shift registers serially connected. Therefore, any artisan having working knowledge in the art would have been motivated to replace the shift register of Lim et al. by the FIFO buffer as taught by Le Ngoc they can be interchangeably used and configured to store data elements and output them in an orderly manner.

Lim et al. do not also explicitly teach the conversion of a second plurality of bits from the first signal to a second multi bit value. It is well known in the art that for the conversion of signals to be completed the algorithm used to convert the signals must be repeated until all the bits that need to be converted have been processed.

Lim et al. do not teach that the look up table is contained in a memory located on a digital signal processor or contained in an external memory coupled to a digital processor. It is to be noted that the look up table is itself a memory for its ability to store, read, and write digital data to an address. Hence, the memory can be distributed, external, or local, on-chip, remote and can be implemented and/or transmitted by any known or developed medium that can store information suitable for later use. Therefore, any artisan having working knowledge in the art would have been motivated to build a local or external memory system based on system requirements and the environment the memory is to be used.

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Lim et al. do not explicitly disclose a conversion from direct stream digital (DSD) to pulse code modulated (PCM). However this practice is well known in the art as disclosed by Kamiya (col. 6, lines 13-24; abstract) for the benefit of providing high quality PCM data with minimal noise and al distortion.

Allowable Subject Matter

3. Claims 2-3, 5-6, 12-17, 22, 25-29 are allowed.
4. Claims 9-10, 19, 32 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments with respect to claims 7,8, 18,20, 21, 23, and 30-31 have been considered but are moot in view of the new ground(s) of rejection.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peguy JeanPierre whose telephone number is (571) 272-1803/272-1803. The examiner fax phone number is (571) 273-1803.


Peguy JeanPierre
Primary Examiner